## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 28 July 2005 (28.07.2005)

**PCT** 

# (10) International Publication Number WO 2005/068778 A1

(51) International Patent Classification<sup>7</sup>: E21B 43/02, 33/138

(21) International Application Number:

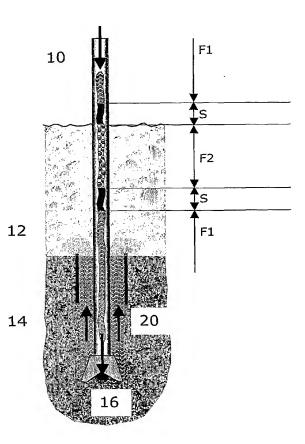
PCT/EP2005/000054

- (22) International Filing Date: 4 January 2005 (04.01.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 04290127.2 16 January 2004 (16.01.2004) EF
- (71) Applicant (for FR only): SERVICES PETROLIERS SCHLUMBERGER [FR/FR]; 42, rue Saint-Dominique, F-75007 Paris (FR).
- (71) Applicant (for AT, AU, AZ, CO, DE, DK, ES, HR, ID, IE, IT, KP, KR, KZ, MX, NO, NZ, PH, PL, RO, RU, SK, TM, UA, ZA only): SCHLUMBERGER TECHNOLOGY B.V. [NL/NL]; Parkstraat 83-89, 2514 JG The Hague (NL).

- (71) Applicant (for AG, AL, AM, AT, BA, BB, BE, BF, BG, BJ, BW, BY, BZ, CF, CH, CI, CR, CU, CY, DM, EE, FI, GB, GD, GE, GH, GM, GR, HU, IL, IS, JP, KE, KG, LC, LK, LR, LS, LU, LV, MC, MD, MG, MK, ML, MN, MR, MW, MZ, NA, NI, NL, PL, PT, RU, SC, SE, SG, SI, SL, SM, SN, SZ, TG, TJ, TZ, UG, US, UZ, VC, YU, ZM, ZW only): SCHLUMBERGER HOLDINGS LIMITED; PO Box 71, Craigmuir Chambers, Road Town, Tortola (VG).
- (71) Applicant (for CA only): SCHLUMBERGER CANADA LIMITED [CA/CA]; 525 3rd Avenue S.W., Calgary, Alberta T2P OG4 (CA).
- (71) Applicant (for CN only): SCHLUMBERGER OVER-SEAS S.A. [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City (PA).
- (71) Applicant (for AE, OM, SD, SY, TR only): SCHLUM-BERGER OILFIELD ASSISTANCE LIMITED; Craigmuir Chambers, Road Town, Tortola (VG).

[Continued on next page]

# (54) Title: METHOD OF CONSOLIDATING AN UNDERGROUND FORMATION



(57) Abstract: A method of stabilising an underground formation surrounding a borehole comprising placing a treatment fluid in the formation, the treatment fluid comprising cross-linkable polymer and a cross-linking agent, and allowing the treatment fluid to gel in-situ, characterised in that after placement of the treatment fluid in the formation, an activator fluid is pumped into the well to bring about cross linking of the polymer to form the gel.



- (71) Applicant (for BR only): SCHLUMBERGER SURENCO S.A. [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City, Panama (PA).
- (71) Applicant (for TT only): SCHLUMBERGER SER-VICES LIMITED; P.O. Box 438, Tortola (VG).
- (71) Applicant (for EG only): SCHLUMBERGER SEACO INC. [PA/PA]; 8 Calle Aquilino de la Guardia, Panama City, Republic of Panama (PA).
- (71) Applicant (for CG, CM, CZ, DZ, EC, GA, GN, GQ, GW, IN, LT, MA, NA, NE, PG, TD, TN, VN only): PRAD RESEARCH AND DEVELOPMENT NV [NL/NL]; De Ruyterkade 62, Willemstad-Curacao (AN).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): CAMBUS-BRUNET, Chrystel [FR/FR]; Le four a Chaux-Route de Houdan, F-78550 Richebourg (FR). BAR-LET-GOUEDARD, Veronique [FR/FR]; Residence La Baleine-3, Rue du Merou, F-92290 Chatenay-Malabry (FR).
- (74) Agent: ETUDES & PRODUCTIONS SCHLUM-BERGER; 1, rue Henri Becquerel BP 202, F-92142 Clamart Cedex (FR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

- AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### **Declaration under Rule 4.17:**

of inventorship (Rule 4.17(iv)) for US only

### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.